

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Robert James TRIBE et al.

Serial No. 09/920,728

Filed: August 3, 2001

For: SYRINGE PUMPS

Art Unit: 3763

Examiner: Rodriguez, Cris L.

Atty Docket: 0100/0131

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RESPONSECommissioner for Patents
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Total Pages: 3

Sir:

The following is a response to the Office Action dated August 11, 2003.

Pending claims 1, 4, 5 and 7-10 were rejected under 35 U.S.C. 102(e) as being anticipated by Moberg U.S. patent 6,362,591.

It is respectfully submitted that the rejection under Moberg is not sustainable in view of the following.

The pending claims require a syringe pump having a force sensor responsive to occlusion. When an excess force indicative of occlusion is detected, the drive is reversed until the force detected by the force sensor falls by a predetermined amount. The purpose of this arrangement is to prevent there being an excessive fluid pressure within the tubing when the occlusion is cleared since this could result in an excessively large bolus of medication being administered. Because the arrangement of the present invention reverses until the actual detected force falls by a predetermined amount it ensures that the

fluid pressure is relieved to a safe level without any risk of a negative pressure being created.

The pump described by Moberg also reverses drive when an occlusion is detected but this is not in response to detection of an elevated force, as in the present invention, but, instead, indirectly in response to the effect on the motor. More particularly, Moberg uses an encoder and measures various motor parameters as set out in Column 5, lines 39 to 43. See also the flow diagrams of Figures 5-7 and the discussions thereof starting on Column 7, line 25 in which current, encoder count and torque are disclosed as the motor parameters used. Indeed, the whole aim of Moberg is to avoid pressure sensing, as set out in column 1, line 58 to column 2, line 28.

Furthermore, Moberg does not reverse drive until the detected force falls by a predetermined amount, as required by the claims of the present application. Instead, he rewinds by a preset distance, as set out in column 6, lines 10 to 17.

The arrangement described by Moberg is, therefore, distinctly different from that of the present invention.

The Examiner stated that Moberg does include a force sensor because this is shown in US 4678408, which is incorporated by reference in the '591 patent.

The incorporation of the '408 patent was, however, only to explain "the construction and operation of a medication infusion pump of this general type" (column 4, lines 27 to 29) and appears in a paragraph discussing how the motor and lead screw operate together to drive the plunger. And the type of high pressure switch infusion pump disclosed in the '408 patent is precisely the type of pump with disadvantages that Moberg attempts to overcome. (Column 2, lines 2 to 28) As mentioned above, the whole purpose of the invention of the '591 patent was to avoid force sensing. The arrangement described in the

'591 employs an alternative arrangement to detect occlusion and does not require any force sensor; if it did, one would have been specifically mentioned.

In light of the foregoing, the examiner is respectfully requested to reconsider the application and pass the same to issue.

Respectfully submitted,



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